

regard to its inspection. It is best applied by being sown broadcast on the growing crop, on clover early in the Spring, and on indian corn just before it begins to shoot. The proper quantity is from one-half to one bushel per acre. An advantage is also derived from rolling the corn in it before planting. To compost heaps, to barn yard and to stable manure, it should be applied every few days in quantities depending on the number of stock, one gallon at a time, being enough for the largest yards or stables in the country.

This should be done whether gypsum is applicable to the soil upon which the *manure* is to be used or not, as it preserves one of the valuable constituents of the manure which would be otherwise lost. *Sulphate of soda*, which is but common glauber salts, is another form in which the sulphuric acid, or one of the sulphates, can be applied. They are very cheap, being worth about three-fourths of a cent per pound, and when the soil is deficient in soda, should be preferred to gypsum, as by it both sulphuric acid and soda will be supplied at the same time.

Besides furnishing the elements to crops, which enter into its composition, gypsum is decomposed by the ammonia always present in the atmosphere, which, by uniting itself to the sulphuric acid of the gypsum, loses its volatility, that is, its tendency to escape into the air.

The application of gypsum, then, beside furnishing its own elements to crops, retains for them much valuable food from the air.

This mode of the action of gypsum has been denied by some very distinguished writers who allege against this theory, that the increase of the substances in crops which it absorbs from the air, is far beyond what the quantity applied is capable of retaining. Those who take this ground forget, that when sulphate of lime is decomposed by carbonate of ammonia, the growing crop takes up the ammonia without using the sulphuric acid, which is thus left to absorb and yield to the crop successive quantities of ammonia, as long as it remains in the soil. All chemists are familiar with similar action in the manufacture of certain chemical compounds.

*Sulphate of magnesia*, common Epsom salts, is another source from which the sulphuric acid may be applied to soils deficient in its two constituents, viz: sulphuric acid and magnesia. Though much dearer than the two above mentioned, it will be found superior to them on soils deficient in both sulphuric acid and magnesia. I have now some experiments to be performed in relation to the use of its substance, which, when complete, will be laid before the public.

*Chlorine*, which, in combination with bases, forms what are called in the language of chemistry chlorides, is another of the necessary constituents of soils, and consequently a manure. Common salts is the form in which it is most cheaply supplied. The indication for its use, is its presence or absence in the soil, or the